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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/762,156      | 01/20/2004  | Naohito Kojima       | 2102487-991320      | 4963             |

26379 7590 09/13/2006

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EXAMINER

NADAV, ORI

ART UNIT PAPER NUMBER

2811

DATE MAILED: 09/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/762,156

Applicant(s)

KOJIMA ET AL.

Examiner

Ori Nadav

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 July 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 7 and 9-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

The indicated allowability of claims 1-6 and 8 is withdrawn in view of the newly discovered reference(s) to Igarashi et al. (6,262,487). Rejections based on the newly cited reference(s) follow.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claimed limitations of a signal wiring has an intersecting angle either 45 degrees and 135 degrees relative to either of the first signal wiring and the second signal wiring, as recited in claim 4, are unclear as to what the signal wiring is intersecting, what are the two choices relating to the terms "either" (the terms "either " and "or" must be recited together), and which element is relative to either of the first signal wiring and the second signal wiring.

The claimed limitations of "which connects the buffering cells arranged adjacent to the first side", as recited in claim 8, are unclear as to which element connects the buffering cells arranged adjacent to the first side.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 and 8, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Igarashi et al. (6,262,487) in view of Applicant Admitted Prior Art (AAPA).

Igarashi et al. teach in figure 13C and related text a semiconductor integrated circuit comprising:

- a function block 80 arranged on a substrate;
- a first buffering cell 183 arranged adjacent to a first side of the function block;
- a second buffering cell (since there are plurality of cells 183) arranged adjacent to a second side adjacent to the first side of the function block and
- a signal wiring 173 passing over the function block obliquely relative to the first side and the second side.

Igarashi et al. do not explicitly state that the signal wiring connecting the first buffering cell and the second buffering cell.

Igarashi et al. teach in figure 6A and related text a signal wiring 23 is connected to a buffering cell 20.

AAPA teaches in figure 1 and related text a wiring 4b connecting the first buffering cell 3b1 and the second buffering cell 3b2.

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It would have been obvious to a person of ordinary skill in the art at the time the invention was made to connect the signal wiring to the first buffering cell and the second buffering cell in Igarashi et al.'s device in order to improve the device characteristics by providing electrical connections between the buffering cells.

Regarding claims 2-6, Igarashi et al. teach in figures 4 and 10 and related text a first signal wiring 1 extending in a generally horizontal direction, which is arranged inside the function block and extends obliquely relative to the signal wiring; and a second signal wiring 2 extending in a generally vertical direction generally perpendicular to the horizontal direction, which is arranged inside the function block and generally perpendicular to the first signal wiring and extends obliquely relative to the signal wiring, wherein

the signal wiring is arranged in a layer higher than the layer in which the first signal wiring and the second signal wiring are arranged, wherein

the signal wiring has an intersecting angle either 45 degrees and 135 degrees relative to either of the first signal wiring and the second signal wiring, wherein

the signal wiring is a global signal wiring including one of a data bus and an address bus, wherein

the first buffering cell and the second buffering cell are arranged outside of the function block.

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Regarding claim 8, Igarashi et al. and AAPA teach substantially the entire claimed structure, as applied to claim 1 above. Igarashi et al. do not teach that each of a plurality of signal wirings have a length shorter than a length of a side of the function block.

AAPA teaches in figure 1 and related text a signal wiring 4b having a length shorter than a length of a side of the function block 2.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the plurality of signal wirings having a length shorter than a length of a side of the function block in Igarashi et al.'s device in order to reduce the wiring delay and to reduce the cross-talk noise. Note that the length of the signal wiring is an important criteria in the design of the device.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-6 and 8 have been considered but are moot in view of the new ground(s) of rejection.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ori Nadav whose telephone number is 571-272-1660.

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The examiner can normally be reached between the hours of 7 AM to 4 PM (Eastern Standard Time) Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on 571-272-1732. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to be 'ORI NADV', is written above the printed name.

O.N.  
9/4/06

ORI NADAV  
PRIMARY EXAMINER  
TECHNOLOGY CENTER 2800